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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,128	04/03/2001	Raymond Grant Rowe	RD-27,905/USA	1704
6147	7590	10/22/2003	EXAMINER	
GENERAL ELECTRIC COMPANY			IP, SIKYIN	
GLOBAL RESEARCH CENTER			ART UNIT	
PATENT DOCKET RM. 4A59			PAPER NUMBER	
PO BOX 8, BLDG. K-1 ROSS			1742	
NISKAYUNA, NY 12309			DATE MAILED: 10/22/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application N .</b>	<b>Applicant(s)</b>
	09/825,128	ROWE ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Sikyin Ip	1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 August 2003.
- 2a) This action is **FINAL**.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 9 and 11-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 9, 11-25 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 9 and 11-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The expression "immediately" in claim 9, step b), ii) does not have the conventional meaning to exclude step immediately before quenching step and prior step because quenching step requires a heating step to raise temperature back to first predetermined temperature after forced-air cooling (claim 11).
4. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claims 9 and 11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. Claims 9 and 11 are found inconsistent with [0011] of the instant specification because claim 9, step b), ii) after forced-air cooling (claim 11) requires reheating back to first predetermined temperature before quenching in a bath. Reheating after forced-air cooling is not disclosed in the [0011] of the instant specification.

***Claim Rejections - 35 USC § 103***

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c ) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 9, 11-15, and 21-25 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 4702299 to Gravemann in view of USP 4820356 to Blackburn et al.

10. Gravemann disclose(s) the features including the claimed application of Ni

superalloy for wear-proof inserts (col. 5, lines 7-17). The difference between the reference(s) and the claims are as follows: Gravemann does not disclose the heat treatment of the Ni superalloy. However, Blackburn (col. 2, line 30- col. 7, line 50, Tables I-IV, and examples - especially example 1) disclose(s) heat treatment of Ni superalloys for improving crack property at high temperature with steps comprising heating to below gamma prime solvus, forced air cooling, cooling, and aging (Example 1, in col. 5, lines 1-15) in the same field of endeavor or the analogous metallurgical art. The high temperature crack is also a problem for mold/die materials. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to heat treat Ni superalloy insert of Gravemann as taught by Blackburn in order to improve crack property. In re Venner, 120 USPQ 193 (CCPA 1958), In re LaVerne, et al., 108 USPQ 335, and In re Aller, et al., 105 USPQ 233.

11. Claims 16-20 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 4820356 to Blackburn et al.

12. Blackburn (col. 2, line 30- col. 7, line 50, Tables I-IV, and examples, especially example 2) disclose(s) heat treatment of Ni superalloys for improving crack property at high temperature with steps comprising heating to below gamma prime solvus, cooling, and aging (Example 2, in col. 5, lines 15-20) in the same field of endeavor or

the analogous metallurgical art. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the subject matter disclosed by the reference. Overlapping ranges have been held to be a *prima facie* case of obviousness.

See Titanium Metals Corporation of America, 227 USPQ 773 (Fed. Cir. 1985) and In re Petering, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).

13. The wording "below" in lines 5 and 8 of claims 16 and 21 respectively fails to define a definite heating temperature. Thus, said temperature reads on any controlled cooled temperature above room temperature as disclosed by Blackburn (col. 2, lines 29-53).

14. Using inert gas during heat treatment is conventional and it is contemplated within ambit of ordinary skill artisan to protect heating material from oxidized.

#### *Response to Arguments*

15. Applicant's arguments filed August 12, 2003 have been fully considered but they are not persuasive.

16. Applicants' argument as set forth in page 9, first full paragraph of the instant remarks is noted. But, applicants' attention is directed to col. 5, lines 1-15 which discloses heating below gamma prime solvus temperature, forced-air cooling, then cooling, and aging.

17. Applicants' argument in page 9, third full paragraph of the instant remarks is noted. But, applicants' attention is directed to Blackburn example 2, (col. 5, lines 1-20) which has

omitted the controlled cooling.

*Conclusion*

18. The prior art made of record is considered pertinent to applicant's disclosure. Per request of applicants that USP 4250076 to Golden et al (col. 1, line 61 to col. 2, lines 2) and USP 3948311 to Sylvester (col. 1, lines 20-38) are cited to show high temperature crack is a known problem for mold/die materials. Metal Handbook 1948 edition (page 294) is cited to show protective atmosphere is known in heat treatment art to reduce metal oxidation during heating.

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See MPEP § 2163.06 (a) and 37 C.F.R. § 1.119.

*Examiner Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone number for this Art Unit 1742 are (703) 305-3601 (Official Paper only) and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be

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entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

*C*  

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**SIKYIN IP**  
**PRIMARY EXAMINER**  
**ART UNIT 1742**

S. Ip  
October 20, 2003